Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Glass transition and stable glass formation of tetrachloride.[1]
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— Physical vapor deposition (PVD) has been used to prepare organic glasses with very high kinetic stability and it has been suggested that molecular anisotropy is a prerequisite for stable glass formation. Here we use PVD to prepare glasses of tetrachloromethane, a simple organic molecule with a nearly isotropic molecular structure. *In situ* AC nanocalorimetry was used to characterize the vapor-deposited glasses. Glasses of high kinetic stability were produced by deposition near 0.8 T_g. The isothermal transformation of the vapor-deposited glasses into the supercooled liquid state gave further evidence that tetrachloromethane forms glasses with high kinetic stability, with the transformation time exceeding the structural relaxation time of the supercooled liquid by a factor of 10^3. The glass transition temperature of liquid-cooled tetrachloromethane is determined as $T_g = 78$ K, which is different from previously reported values. The frequency dependence of the glass transition was also determined and the fragility was estimated as $m = 118$. The successful formation of PVD glasses of tetrachloromethane that have high kinetic stability strongly argues that molecular asymmetry is not a prerequisite for stable glass formation.

[1]National Science Foundation (CHE-1265737)

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Date submitted: 10 Nov 2016 Electronic form version 1.4